

AMENDMENTS TO THE DRAWINGS

The attached sheet of drawings includes changes to Figure 1 to move reference characters 1, 2, 3, 4, 5, and 6 and to add lead lines for improved clarity.

Attachments: Replacement Sheet

REMARKS

Claims 9-13 are pending in the application.

By the foregoing Amendment, claims 1-8 are cancelled without prejudice or disclaimer.

New claims 9-13 are added. The specification and drawings are also amended.

New claim 9 incorporates the limitations of canceled claims 1, 4, and 5, rewritten for better conformity with U.S. practice. New dependent claims 10-13 incorporate the limitations of canceled dependent claims 2, 3, and 6, also rewritten for better conformity with U.S. practice.

New claim 9 recites “optical transmission means arranged downstream of the beam splitter in the direction of detection for regular transmission of detected light” and “optical reduction means for reducing the diameter of a beam bundle to be imaged, the optical reduction means being mounted immediately at the beam splitter housing between the beam splitter and the optical transmission means in the direction of the detection.” The structure disclosed in the specification corresponding to the “optical transmission means” is the detection tube lens 5. The structure in the specification corresponding to the “optical reduction means” is the illumination tube lens 4.

The specification is amended to correct translation and typographical/transcription errors; and is also amended for consistency with the claims as originally filed to describe a generic optical arrangement 6 and the embodiment in which the optical element 6 is a diffractive optical element. Figure 1 is amended to move reference characters 1, 2, 3, 4, 5, and 6 and to add lead lines for improved clarity.

These changes are believed not to introduce new matter, and entry of the Amendment is respectfully requested.

Based on the above Amendment and the following Remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections, and withdraw them.

Information Disclosure Statement

The Notice Of Related Patent Applications is resubmitted herewith, with the related applications listed on a Form PTO SB/08a.

Objections to the Drawings

In paragraph 6 the Office Action, the drawings were objected to because reference character "DE" is not mentioned in the description; and in paragraph 7, the drawings were objected to because reference characters 4 and 5 were both used to designate both "a detection tube lens" and an "illumination tube lens" and because reference character was used to designate both "a detection tube lens" and an "illumination tube lens." These objections are believed to be overcome by the amendment of the specification to add "DE" and to use reference character "4" consistently for the "illumination tube lens" and reference character "5" for the "detection tube lens."

In paragraph 8 of the Office Action, the drawings were objected to because the numbers and reference characters are not plain and legible. This objection is believed to be overcome by the accompanying amendments to Figure 1.

In paragraph 9 of the Office Action, the drawings were objected to as not showing the "second optical arrangement is a diffractive optical element," "a second lens is provided on another deflecting element or is integrated in the deflecting element, singly or in combination

with the second element at the beam splitter,” and “the second optical arrangement comprises a tilted mirror in deflecting element in the form of a convex or concave mirror.”

The objection with respect to a “second optical arrangement is a diffractive optical element” is believed to be overcome by the amendments to the specification to use the generic term “optical arrangement” in connection with reference character 6. It is believed that the block illustration of the optical arrangement 6 is adequate with respect both to the embodiment of a convex lens and the embodiment of a diffractive optical element.

The objection with respect to “a second lens is provided on another deflecting element or is integrated in the deflecting element, singly or in combination with the second element at the beam splitter” and “the second optical arrangement comprises a tilted mirror in deflecting element in the form of a convex or concave mirror” is overcome by the cancellation of claims 7 and 8.

Rejection under 35 U.S.C. § 112, ¶ 1

In paragraph 14 of the Office Action, claims 1-8 were rejected under section 112, first paragraph. This rejection is overcome by the cancellation of claims 1-8. New claims 9-13 are believed to be in compliance with all requirements of section 112.

Rejections under 35 U.S.C. § 102

1. Claims 1, 2, 4, 5, and 7

In paragraph 16 of the Office Action, claims 1, 2, 4, 5, and 7 were rejected under section 102(b) as being anticipated by Webb et al. (“Webb”). This rejection is believed to be overcome

by the cancellation of claims 1, 2, 4, 5, and 7. To the extent the Examiner may consider this rejection to be applicable to new claim 9 and its dependent claims, it is respectfully traversed.

In the invention as recited in new claim 9, a beam splitter is positioned to separate the illumination and detection beam paths; and an optical reduction means for reducing the diameter of a beam bundle to be imaged is mounted immediately at the beam splitter housing between the beam splitter and the optical transmission means in the direction of the detection.

In the Office Action, Webb's elements 22 and 38, shown in Figure 1, were respectively characterized as corresponding to the "second optical arrangement" and the "beam splitter" recited in claim 1. However, Webb's element 38 is one of three dichroic mirrors employed to split off the fluorescence pathway for each of the three detector alternatives. Thus, Webb's mirror 38 is not "positioned to separate the illumination and detection beam paths," as required by claim 9; and Webb's element 22 is not mounted between such a beam splitter and optical transmission means in the direction of the detection, as also required by claim 9.

In view of the foregoing, it is respectfully submitted that the invention as recited in new claim 9 and the claims depending therefrom is patentable over Webb, and that the rejection should be withdrawn.

2. Claims 1, 2, and 6

In paragraph 22 of the Office Action, claims 1, 2, and 6 were rejected under section 102(b) as being anticipated by Engelhardt. This rejection is believed to be overcome by the cancellation of claims 1, 2, and 6. To the extent the Examiner may consider this rejection to be applicable to new claim 9 and its dependent claims, it is respectfully traversed.

In the Office Action, Engelhardt's element 21 was characterized as a beam splitter positioned for separation of the illumination and detection beam paths, Engelhardt's element 17

or 18 was characterized as at least one optical arrangement in the direction of detection for regular transmission of a detected light, and Englehardt's element 25 was characterized as a second optical arrangement between the beam splitter and the optical arrangement. Engelhardt's elements 17 and 18 are focusing optical systems, and element 25 is a "launching optical system." Engelhardt does not teach or suggest a housing for the beam splitter 21, much less mounting the "launching optical system" 25 immediately at such a housing between the beam splitter and the optical transmission means in the direction of the detection, as required by claim 9. Engelhardt also does not teach or suggest that the "launching optical system" 25 reduces the diameter of a beam bundle to be imaged, as also required by claim 9.

In view of the foregoing, it is respectfully submitted that the invention as recited in new claim 9 and the claims depending therefrom is patentable over Engelhardt, and that the rejection should be withdrawn.

Rejections under 35 U.S.C. § 103

1. Claim 3

In paragraph 29 of the Office Action, claim 3 was rejected under section 103(a) as being unpatentable over Webb in view of Londono et al. ("Londono"); and in paragraph 31, claim 3 was rejected under section 103(a) as being unpatentable over Engelhardt in view of Londono. These rejections are overcome by the cancellation of claim 3. To the extent the Examiner may consider these rejections to be applicable to new claim 11, it is respectfully traversed.

In the Office Action, it was conceded that "Webb does not specifically disclose that the second optical arrangement is a diffractive optical element (DOE)"; and Londono was cited as supplying this teaching. However, Londono does not remedy the deficiencies of Webb with

respect to teaching optical transmission means arranged downstream of the beam splitter in the direction of detection for regular transmission of detected light, and optical reduction means for reducing the diameter of a beam bundle to be imaged, the optical reduction means being mounted one of immediately at the beam splitter housing and integrated in the housing of the beam splitter, between the beam splitter and the optical transmission means in the direction of the detection. Therefore, the combination of Webb and Londono cannot teach or suggest the claimed invention; and the rejection should be withdrawn.

2. Claim 8

In paragraph 33 of the Office Action, claim 8 was rejected under section 103(a) as being unpatentable over Engelhardt in view of Tsien. This rejection is overcome by the cancellation of claim 8.

Conclusion

All objections and rejections have been complied with, properly traversed, or rendered moot. Thus, it now appears that the application is in condition for allowance. Should any questions arise, the Examiner is invited to call the undersigned representative so that this case may receive an early Notice of Allowance.

Favorable consideration and allowance are earnestly solicited.

Respectfully submitted,

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Enclosures: Replacement drawings (1 sheet)
Petition for Extension of Time
Notice Of Related Applications
Form PTO/SB/08A
Credit Card Payment Form